

United States Marine Corps

Road Map



The road to success for
**Electro-Optical Ordnance
Repairman**

MOS: 2171-2181



TRAINING AND EDUCATION CONTINUUM

What is a Training and Education (T&E) Continuum?

T&E Continuums were developed to provide a roadmap for the training and education of Marines in their military occupational specialty (MOS). The goal of the T&E Continuum is to develop the best possible Marine, whether it is a first term or career Marine.

What is a T&E MOS Roadmap?

MOS Roadmaps are just what the name implies – a roadmap through the T&E Continuum from Private through MGySgt/SgtMaj - a roadmap to success in the Marine Corps.

Do I have to follow the Roadmap?

Yes and no. The roadmap has four major sub-areas:

- Skill Progression (MOS)
- Common Skills & Professional Military Education (PME)
- Billet Progression & Unit Training
- Voluntary Education (VoEd)

Some of the training is mandatory, for example entry-level training (Boot Camp, MCT, MOS School, etc...). Some may be directed by your chain of command and some is voluntary. We recommend you find a mentor that can help you along the way, or you can seek assistance from your OIC/SNCOIC. Roadmaps are a guide, but as always there are several ways to get where you want to go.

What does the roadmap do for me?

Two things:

1. Provides you a guide to success as a Marine and towards technical mastery.
2. Provides you with an education that will transfer to civilian life when you decide to leave the Marine Corps.

How do I get started?

You already have. All your training up to this

As we mentioned earlier roadmaps have four major sub-areas that we will briefly explain here.

Skills Progression Training is training that will make you a better Marine in your MOS. It is a combination of formal schools, Marine Corps Institute (MCI) courses, National Standard Certification testing, and civilian education that develops your technical proficiency. It is progressive in that you will learn things as you need them and can apply them to your billet and mission.

Common Skills and PME. This is training that makes you a better Marine. PME requirements are already well established in the Marine Corps. It consists of resident courses, MCIs and required reading. The Corporal's Course, Sergeant's Course, etc... are not mandatory, but it is important for your career and growth as a leader to attend. These courses are designed to teach you what you need to know to be a Cpl or Sgt, so you should attend as soon as, or before, you are promoted.

Billet Assignment and Unit Training is hands-on experience; there is no better training. Billet progression provides you with the opportunity to develop by accepting new, more demanding responsibilities and performing new, more difficult tasks. Unit training as prescribed in the Training & Readiness (T&R) manual focuses on the skills you need to accomplish in your MOS that require a collective effort and aids the commander in preparing his unit for combat operations.

Voluntary Education was designed to provide you an uncomplicated way to complete a degree while making you a better Marine. The three major considerations of the VoEd roadmap was class availability (especially while deployed), use of free electives, and education required as you progress in rank and billet assignments.

Private - PFC

1st

Yea

SKILLS PROGRESSION TRAINING

(ACE Identifier)

ACE Recommended Credit

- E/O Ordnance Repair Course⁽¹⁾ (MC-1714-0019) 2 SH Shop Safety/Procedures
- 3 SH Basic Electricity
- 2 SH Basic Electronics
- 2 SH Digital Circuits
- MCI (1142B) Solid State Devices⁽¹⁾ (MC-1715-0132) 2 SH Survey of Elec Devices

COMMON SKILLS TRAINING / PME

ACE

Recommended Credit

- Enroll in Uniformed Services Military Apprenticeship Program USMAP (0250M)⁽¹⁾ 0 SH
- Recruit Training⁽¹⁾ (MC-2204-0088) 4 SH (1) PhysFit (2) Marksmanship (1) Orienteering
- Marine Combat Training⁽¹⁾ (MC-2204-0105) 3 SH Military Skills
- MCI (3420E) Personal Financial Mgmt (MC-1401-0009) 1 SH Financial Management
- MCI (0210B) Terrorism for Marines (MC-1606-0010) 1 SH Intro to Terrorism

BILLET ASSIGNMENT / UNIT TRAINING

- Complete Tan Belt Qualification in MC MAP⁽¹⁾ 0 SH
- Technician with Division, Wing, or FSSG unit
- Complete Military Academic Skills Program (MASP) if required
- Unit training should focus on the collective events established in the Read 2 books from the Marine Reading List Training &

Readiness Manual for this specific grade

VOLUNTARY EDUCATION

ACE Recommended

Credit

- * English Composition I 3 SH English
- * Pre-Calculus for Technology 3 SH Math
- * Denotes College Course
- ⁽¹⁾ Denotes Entry-Level Training

Credit Tally for: Applied Science "Technical Studies" Associate Degree

Arts and Sciences Electives 30 SH Minimum			Applied Professional
Humanities	Social Sciences/History	Natural Science/Math	30 SH Maximum a.k.a. (Free Electives)
(3) * English Comp I		(3) Basic Electricity (3) * Pre-Calculus	(2) Shop Safety (2) Basic Electronics (2) Survey Electronic Devices (2) Digital Circuits (2) Marksmanship (1) Orienteering (3) Military Skills (1) Finance Mgmt (1) Terrorism
(3) Total	(0) Total	(6) Total	(16) Total



21771 Road Map

PFC-LCpl

— 2nd Year —



SKILL PROGRESSION TRAINING

Recommended Credit

- MCI (286G) Fundamentals Digital Logic Intro to Digital Devices

* Communication Circuits

- Complete 1000 hours in USMAP

(ACE Identifier)

ACE

(MC-1715-0184)

2 SH

3 SH Comm Circuits

(1000 hours total)

COMMON SKILLS TRAINING / PME

Recommended Credit

- MCI (0033) Fundamentals of M.C. Ldrshp Supervisory management

- MCI (3316E) Basic Nutrition

- Complete Gray Belt Qualification in MCMAP

- Read 2 books from the Marine Reading List

(MC-1406-0023) 1 SH

ACE

1 SH Nutrition

0 SH

BILLET ASSIGNMENT / UNIT TRAINING

- Technician with Division, Wing, or FSSG unit

- Lance Corporals may apply for Marine Security Guard (MSG) duty as a "watch stander"

- Unit training should focus on the collective events established in the Training &

Readiness Manual for this specific grade

VOLUNTARY EDUCATION

* Speech 101

Communications

* Psychology 101

ACE Recommended Credit

3 SH Oral

3 SH Psychology

Credit Tally for:

Applied Science "Technical Studies" Associate Degree

Arts and Sciences Electives 30 SH Minimum			Applied Professional	
Humanities	Social Sciences/History	Natural Science/Math	30 SH Maximum a.k.a. (Free Electives)	
(3) * English Comp I (3) * Speech	(3) * Psychology I	(3) Basic Electricity (3) * Pre-Calculus	(2) Shop Safety (2) Basic Electronics (2) Survey Electronic Devices (2) Digital Circuits (2) Marksmanship (1) Orienteering (3) Military Skills	(1) Finance Mgmt (1) Terrorism (2) Digital Devices (3) * Comm Circuits (1) Supervisor Mgmt (1) Nutrition
(6) Total	(3) Total	(6) Total	(23) Total	

21771 Road Map

LCpl-Cpl

—3rd Year—



21771 Road Map

SKILL PROGRESSION TRAINING

(ACE Identifier)

ACE Recommended Credit

* Calculus I

3 SH Math

* General Physics I

3 SH Physics

- MCI (0410B) MIMMS

(MC-1717-0011)

0 SH

- Complete an additional 1000 hours in USMAP total)

(2000 hours

COMMON SKILLS TRAINING / PME

ACE

Recommended Credit

- Complete the Corporal's Course (Resident)

(MC-1405-0051)

4

SH (3) Management (1) Mil Stud

- MCI (3422A) Basic Pay and Allowances

(MC-1401-0016)

1

SH Finance

- MCI (001A) Principles Instruction f/NCOs (MC-1406-0028) 3 SH

Instructional Methodology

- Complete Green Belt Qualification in MCMAP 0 SH

- Read 2 books from the Marine Reading List

- Technician with Division, Wing, or PSSG unit

- Lance Corporals and Corporals may apply for MSG duty as a "watch

stander"

- Unit training should focus on the collective events established in the

Training &

Readiness Manual for this specific grade

VOLUNTARY EDUCATION

ACE Recommended

Credit

* US History I

3 SH History

* Arts/Music/Philosophy Elective

3 SH Humanities

Credit Tally for:

Applied Science "Technical Studies" Associate Degree

Arts and Sciences Electives 30 SH Minimum			Applied Professional	
Humanities	Social Sciences/History	Natural Science/Math	30 SH Maximum a.k.a. (Free Electives)	
(3) * English Comp I (3) * Speech (3) * Arts/Music/Phil	(3) * Psychology I (3) * History I	(3) Basic Electricity (3) * Pre-Calculus (3) * Calculus (3) * Gen Physics I	(2) Shop Safety (2) Basic Electronics (2) Survey Electronic Dev (2) Digital Circuits (2) Marksmanship (1) Orienteering (3) Military Skills (1) Finance Mgmt (1) Terrorism	(2) Digital Devices (3) * Comm Circuits (1) Supervisor Mgmt (1) Nutrition (3) Management (1) Military Studies (1) Finance (3) Instructional Methodologies
(9) Total	(6) Total	(12) Total	(31) Total	

Cpl - Sgt

4th Year

SKILL PROGRESSION TRAINING

ACE Recommended Credit

* Microprocessors

- Complete an additional 1000 hours in USMAP total)

(ACE Identifier)

3 SH Microprocessors

(3000 hours



COMMON SKILLS TRAINING / PME

Credit

- MCI (8010) Sergeant's DEP
Mgmt (1) Lang

(MC-2204-0127)

8 SH (5) Mil Science, (2)

- MCI (0201) Intel Brief: Southwest Asia
Studies

(MC-1511-0001) 2 SH International

- Complete Green Belt Instructor Course

(MC-1406-0088)

3 SH

Martial Arts Instruction

BILLET ASSIGNMENT / UNIT TRAINING

- Read 2 books from the Marine Reading List

- Technician with Division, Wing, or FSSG unit

- Sergeants may apply for MSG, Drill Instructor, Recruiter or Formal

School Instructor (check

the ACE guide for recommended credits for these specific special duty

billets)

- Unit training should focus on the collective events established in the

Training &

Readiness Manual for this specific grade

ACE Recommended

* Computer Science

3 SH Computer Science

* Physical Science Elective w/Lab

4 SH Physical Science

* History II

3 SH History

Credit Tally for:

Applied Science "Technical Studies" Associate Degree

Arts and Sciences Electives 30 SH Minimum			Applied Professional	
Humanities	Social Sciences/History	Natural Science/Math	30 SH Maximum a.k.a. (Free Electives)	
(3) * English Comp I (3) * Speech (3) * Arts/Music/Phil (1) Language	(3) * Psychology I (3) * History I (2) International Studies (3) * History II	(3) Basic Electricity (3) * Pre-Calculus (3) * Calculus (3) * Gen Physics I (4) * Physical Science	(2) Shop Safety (2) Basic Electronics (2) Survey Electronic Dev (2) Digital Circuits (2) Marksmanship (1) Orienteering (3) Military Skills (1) Finance Mgmt (1) Terrorism (2) Digital Devices (3) * Comm Circuits (1) Supervisor Mgmt	(1) Nutrition (3) Management (1) Military Studies (1) Finance (3) Instructional Methodologies (3) * Microprocessors (5) Military Science (2) Management (3) Martial Arts Inst (3) * Comp Science
(10) Total	(11) Total	(16) Total	(47) Total	

****This completes requirement for an Associates in Applied Science "Technical Studies" Degree as prescribed by a SOCMAR School****

21771 Road Map

Sergeant

5th-7th

Year

SKILL PROGRESSION TRAINING

(ACE Identifier)

ACE

Recommended Credit

- Advanced Electronics Technicians Course Yet to be developed
- MCI (0414A) Grnd Maint Mgmt f/ Sup Management (MC-1717-0010) 1 SH
- * General Physics II 3 SH UL Physics
- * Calculus II 3 SH UL Math
- Complete an additional 1000 hours in USMAP (4000 hours total)

COMMON SKILLS TRAINING / PME

AGE

Recommended Credit

- Attend the Sergeant's Course (Resident) (MC-2204-0103) 5 SH (2) Ldrshp, (3) Mil Science
- MCI (7100) SNCO Career DEP (MC-2204-0139) 4 SH (3) Mil Science (1) Ldrshp
- MCI (0342G) Operations/Guerrilla Units (MC-2204-0133) 3 SH Military Science
- MCI (0335C) Infantry Patrolling (MC-2204-0136) 1 SH Physical Education

BULLET ASSIGNMENT / UNIT TRAINING

- Technician with Division, Wing, or FSSG unit (MC-2204-0132) 0 SH
- MCI (8017) Weapons
- Sergeants may apply for MSG, Drill Instructor, Recruiter or Formal School
- Read 2 books per year from the Marine Reading List

Instructor (check the ACE guide for recommended credits for these specific special duty billets)

- Unit training should focus on the collective events established in the Training &

VOLUNTARY EDUCATION

ACE

Readiness Manual for this specific grade

Recommended Credit

- * Principles of Statistics 3 SH Math
- * English Elective 3 SH UL English
- * History Elective 3 SH UL History
- * Ethics Course 3 SH UL Humanities
- * Social Science Electives 3 SH UL Social Sciences

Credit Tally for:

Bachelor of Science/Liberal Arts Degree

Arts and Sciences Electives 60 SH Minimum (21 Upper Level)			Applied Professional 60 SH Maximum (9 Upper Level) a.k.a. (Free Electives)		
Humanities	Social Sciences/History	Natural Science/Math			
(3) * English Comp I (3) * Speech (3) * Arts/Music/Phil (1) Language (3) * UL English (3) * UL Humanities	(3) * Psychology I (3) * History I (2) International Studies (3) * History II (3) * UL History (3) * UL Soc Science	(3) Basic Electricity (3) * Pre-Calculus (3) * Calculus (3) * Gen Physics I (4) * Physical Sci (3) * UL Physics (3) * UL Calculus II (3) * Statistics	(2) Shop Safety (2) Basic Electronics (2) Electr Devices (2) Digital Circuits (2) Marksmanship (1) Orienteering (3) Military Skills (1) Finance Mgmt (1) Terrorism (2) Digital Devices	(3) * Comm Circuits (1) Supervis Mgmt (1) Nutrition (3) Management (1) Military Studies (1) Finance (3) Instru Methods (3) * Microprocessor (5) Mil Science (2) Mgmt	(3) Martial Arts (3) * Computer Sci (1) Management (2) Leadership (3) Mil Science (3) Mil Science (2) Leadership (3) Mil Science
(16) Total	(17) Total	(25) Total	(61) Total		



21771 Road Map

Staff Sergeant

8th-13th

Year

SKILL PROGRESSION TRAINING

(ACE Identifier)

ACE

Recommended Credit

- MCI (2100) Advanced Supervisor's Course 0 SH Yet to be developed
- MCI (345C) Logistics/Embark Specialist (MC-1408-0030) 1 SH
- Records Management

- Pass ASE test Automotive Electrical (A6) Repair

4 SH Electrical
ACE

Recommended Credit

- Attend SNCO Career Course (Resident) (MC-2204-0074) 9
- SH (6) Mil Stud, (2) Ldrshp

(1) Physical Fitness

- MCI (8200) SNCO Advanced DEP (MC-2204-0142) 3 SH Military Science
- MCI (3418) Field Budget Formulation (MC-1401-0011) 1

SH Finance Chief with Division, Wing, FSSG or I&I unit

- Staff Sergeant may apply from MBE, Drill Instructor, Recruiter or Formal School Instructor

(check the ACE guide for recommended credits for these specific special duty billets)

- Unit training should focus on the collective events established in the

Training &

VOLUNTARY EDUCATION

ACE Recommended Credit

- Readiness Manual for this specific grade

- Apply for Degree Completion and/or continue with the following courses:

- * Control Systems 3 SH UL Engineering
- * Electronics Elective 3 SH UL Electronics
- * Electronics Elective 3 SH UL Electronics
- * Social Science Elective 3 SH UL Social Sciences

Credit Tally for: Bachelor of Science/Liberal Arts Degree

Arts and Sciences Electives 60 SH Minimum (21 Upper Level)			Applied Professional 60 SH Maximum (9 Upper Level) a.k.a. (Free Electives)		
Humanities	Social Sciences/History	Natural Science/Math			
(3) * English Comp I (3) * Speech (3) * Arts/Music/Phil (1) Language (3) * UL English (3) * UL Humanities	(3) * Psychology I (3) * History I (2) International Studies (3) * History II (3) * UL History (3) * UL Soc Science (3) * UL Soc Science	(3) Basic Electricity (3) * Pre-Calculus (3) * Calculus (3) * Gen Physics I (4) * Physical Sci (3) * UL Physics (3) * UL Calculus II (3) * Statistics	(2) Shop Safety (2) Basic Electronics (2) Electr Devices (2) Digital Circuits (2) Marksmanship (1) Orienteering (3) Military Skills (1) Finance Mgmt (1) Terrorism (2) Digital Devices (3) * Comm Circuits (1) Supervis Mgmt	(1) Nutrition (3) Management (1) Military Studies (1) Finance (3) Instru Methods (3) * Microprocessor (5) Mil Science (2) Mgmt (3) Martial Arts (3) * Computer Sci (1) Management (2) Leadership	(3) Mil Science (3) Mil Science (2) Leadership (3) Mil Science (1) Records Mgmt (4) Elect Repair (6) Mil Studies (2) Leadership (3) Mil Science (1) Finance (3) * UL Engineering (3) * UL Electronics (3) * UL Electronics
(16) Total	(20) Total	(25) Total	(87) Total		

**** This completes the requirements for a Bachelor of Science/Liberal Arts Degree as Prescribed by a SOCMAR School ****



21771 Road Map

Gunnery Sergeant

13th-18th
Year



SKILL PROGRESSION TRAINING

ACE Recommended Credit

- Attend Ground Ordnance Chief's Course
- SH Vehicle Shop Maintenance

(ACE Identifier)

(MC-1717-0008)

3

COMMON SKILLS TRAINING / PME Credit

ACE Recommended

- Attend the SNCO Advanced Course
- Mil Science (3) Ldrshp

(MC-2204-0076)

13 SH (7)

(2) Phys Fit (1) Public Speaking

- MCI (7400) War fighting Skills (DEP)
- Military Studies

(MC-2204-0112)

2 SH

- Read 2 books per year in the the Marine Reading List

BILLET ASSIGNMENT / UNIT TRAINING

- Maintenance Chief with Division, Wing, FSSG or I&I unit
- Gunnery Sergeants may apply for MSG, Drill Instructor, Recruiter or Formal School Instructor

(check the ACE guide for recommended credits for these specific special duty billets)

- Unit training should focus on the collective events established in the Training &

VEGETARIAN EDUCATION

ACE Recommended Credit

- Listed below are the requirements for a Masters of Science in "Management" degree:

- (This roadmap has provided the foundation for entry into a Master's Degree Program, this

particular program is available on-line with two weekend residency requirements).

- Recommend application to an Advanced Degree Completion program, however, if not selected,

this degree program offers the greatest flexibility that we have found.

- * Organizational Theory and Behavior Management

6 GL SH

- * Human Resource Management

3 GL SH Management

- * Economic Issues in Organizations

3 GL SH Management

- * Organizational Research Management

3 GL SH

- * Organizational Management and Leadership I Management

3 GL SH

- **This completes the requirements for a Masters of Science in "Management" as prescribed by a SOCMAR School**

- * Finance and Accounting for Managers Management

3 GL SH

- * Professional Leadership Development I (residency) Management

1 GL SH

- * Professional Leadership Development II (residency) Management

1 GL SH

- * Thesis/Applied Project

3 GL SH

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Master Sergeant

19th-22nd Year



SKILL PROGRESSION TRAINING Recommended Credit

(ACE Identifier)

ACE

COMMON SKILLS TRAINING / PME Recommended Credit

ACE

- Attend the 1stSgt & MSgt seminar
- MCI (8510) Amphibious Warfare School (DEP) Phase I 5 SH (3) Mil Stud (2) Mgmt
(MC-2204-0113)
- MCI (8600) Amphibious Warfare School (DEP) Phase II 5 SH UL (3) Mil Stud (2) Mgmt
(MC-2204-0114)
- Read 2 books per year from the Marine Reading List

BILLET ASSIGNMENT / UNIT TRAINING

- Ordnance Chief with FSSG, I&I, SOI, Recruit or Logistics Depots
- Special Duty recommendations: Senior Marine Instructor/Chief Instructor at a formal school,
Maintenance Analyst at Marine Corps Logistics Chain Analysis Team,
Production Chief at
MCCDC or serve as the Occupational Field Monitor
- Unit training should focus on the collective events established in the Training &
Readiness Manual for this specific grade

VOLUNTARY EDUCATION

ACE Recommended Credit

- Continue to apply for Advanced Degree Completion and/or masters degree

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Master Gunnery Sergeant

SKILL PROGRESSION TRAINING (ACE Identifier)
ACE Recommended Credit



COMMON SKILLS TRAINING / PME
Recommended Credit

ACE

- Attend the SgtMaj & MGySgt Symposium
- Attend Russell Leadership Conference
- MCI (8800) Command & Staff College (DEP) 15 SH UL/GL (3) International Rel

Org Mgmt

(MC-1408-0025)

(3) Mil Stud (3)

History

(3) Theory of War (3) GL Mil
(3) GL National Security

- Read 2 books per year from the Marine Reading List

BILLET ASSIGNMENT / UNIT TRAINING

- Ordnance Chief with MEF, FSSG, Division, FMF Pacific or Atlantic
- Special Duty recommendations: Joint Tour
- Unit training should focus on the collective events established in the Training &

Readiness Manual for this specific grade

VOLUNTARY EDUCATION

- Continue to pursue Master's Degree if not completed

2181 Road Map

NOTES FOR READING THE ROADMAP

General Information

1. Formal Military Schools and MCIs are listed in "BLACK".

2. Lower Level college courses (Freshmen/Sophomore) are listed in "BLUE".

3. Upper level (UL) college courses (Junior/Senior) are listed in Green.

4. American Council on Education (ACE) identifiers gives college and career counselors a reference to validate the recommended credits. The credits listed in this roadmap are current as of 16 January 2004. Updates to these can be found on-line at:

<http://www.militaryguides.acenet.edu>

Skill Progression

1. In addition to MCIs, and Formal MOS schools, certain MOSs can pass national certification testing: National Institute of Metallurgical Society (NIMS) for machinists, Students Excelling through National Standards of Excellence (SENSE) for welders, Automotive Service Excellence (ASE) for mechanics and technicians, etc...

2. Uniformed Services Military Apprenticeship Program (USMAP) is available to most active duty MOSs and is certified by the U.S. Department of Labor. This would qualify you as a journeyman apprentice which could mean a significantly higher starting salary in the civilian work force.

Common Skills/PME

1. This area covers training which is common to all Marines.

Billet Assignment/Unit Training

1. At division assignments you'll be conducting organizational level maintenance and this will give you a good feel for what it takes to fix equipment with limited time and resources.

2. At FSSG and wing assignments you'll

Voluntary Education

1. The voluntary education listed in the roadmap refers specifically to taking college level courses (MCIs and some PME are also "voluntary").

2. The degree program selected in the roadmap is just an example of one you could pursue. Many others are available through the SOCMAR network and can be found at:

<http://www.soc.aascu.org/socmar/HandbookKM.html>

In selecting the degree program for each MOS, lots of things were taken into consideration (i.e. availability of courses on-line, residency requirements, or other types of correspondence, campus locations, allowable credit transfers from non-traditional learning such as testing (CLEP/DANTES), and experiential learning.

3. Testing can replace the requirement to attend most of the college courses listed in the roadmap. Base education centers offer CLEP and DANTES tests for active duty military at no cost. Study guides for testing for most of the courses are also available at the education centers.

4. ASE exams are also available at the education centers. DANTES will pay for active duty military to take 3 exams per semi-annual year (every 6 months). The tests are offered in the spring and fall of every year and do require, at present, a \$31.00 non-refundable registration fee. ASE exams require documentation of two years experience working in the automotive industry. (LAV, Tank, AAV, engineer, and MT mechanics usually fall in this category and USMAP can help to document this experience).

5. Tuition assistance (T/A) currently pays for 100% of college course tuition. Students must pay for books and study guides. Tuition rates at most community colleges are much cheaper than for 4 year universities. You should consider taking most of your lower level courses through them as it saves the Marine Corps a tremendous amount of money which can